CLAIMS

What is claimed is:

1. A method of congestion control in a communication network, comprising

rate limiting packet transmissions over selected communication links within the network at control nodes thereof; and

modulating the rate limiting according to buffer occupancies at the control nodes.

2. The method of claim 1 wherein the rate limiting comprises modulation of packet bandwidths of traffic streams utilizing the selected communication links.

3. The method of claim 2 wherein the modulation of the packet bandwidth is performed dynamically in response to measured network performance metrics.

4. The method of claim 3 wherein the network performance metrics are selected from the list including: throughput of the selected communication links input to the control nodes and/or buffer occupancy level at the control nodes.

5. The method of claim 3 wherein the network performance metrics are measured according to at least one of: a moving average of the measured quantity, a standard average of the measured quantity, or another filtered average of the measured quantity.

6. The method of claim 2 wherein the modulation of packet bandwidths is achieved by varying an inter-packet delay time over the selected communication links at the control nodes.

7. The method of claim 1 wherein the control nodes are located upstream of congested nodes within the network.

8. The method of claim 1 wherein the control nodes are located downstream of congested nodes within the network.

9. The method of claim 1 wherein the control nodes are located on only a few of a number of communication links that are coupled to a congested node within the network.

10. The method of claim 1 wherein the control nodes are associated with only a fraction of a total number of traffic streams applied to a congested node within the network.

11. The method of claim 1 wherein the modulating according to buffer occupancies is performed according to a modulation function that is linear in nature.

12. The method of claim 1 wherein the modulating according to buffer occupancies is performed according to a modulation function that is quadratic in nature.

13. The method of claim 1 wherein the modulating according to buffer occupancies is performed according to a modulation function that is step-wise in nature.

14. A communication network comprising a number of nodes interconnected with one another through one or more communication links, a first one of the nodes being configured to control packet loss within the network by rate limiting packet transmissions over selected ones of the communication links, such rate limiting being modulated according to buffer occupancy at the first one of the nodes.

15. The network of claim 14 wherein the rate limiting is modulated according to a modulation function that is one of linear, quadratic or step-wise in nature.

16. The network of claim 14 wherein the rate limiting comprises modulation of packet bandwidths of traffic streams utilizing the selected communication links.

17. The network of claim 16 wherein modulation of the rate limiting is set empirically according to network conditions.

18. The network of claim 16 wherein the rate limiting is performed dynamically in response to measured network performance metrics.

19. The network of claim 18 wherein the network performance metrics are selected from the list including: throughput of the selected communication links input to the control nodes and/or buffer occupancy level at the control nodes.

20. The network of claim 18 wherein the network performance metrics are measured according to at least one of: a moving average of the measured quantity, a standard average of the measured quantity, or another filtered average of the measured quantity.